USSR UDC 547.831'781.1

KHRISTICH, B. I., KRUCHININ, V. A., POZHARSKIY, A. F., and SIMONOV, A. M.,
Rostov-on-Don State University

"Effect of the Basicity of Aza-groups on the Course of Nucleophilic Substitution in Imidazo [4,5-f] quinolines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 814-817.

Abstract: Imidazo [4,5-f] quinoline was selected as a model compound becuase it contains two potentially active centers with respect to the nucleophilic reagents such as phenyllithium, sodamide, - namely positions 2 and 7. It was established that the quinoline nucleus is more reactive towards these reagents than the imidazole nucleus. An assumption was stated that the course of nucleophilic attacks is principally determined by the relative basicity of the aza group. The nucleophilic attack occurs at the carbon atom adjacent to the more basic nitrogen atom. This assumption was supported by molecular orbital calculations and pK_a values. The positive charge or the energy of anionic localization on C_2- and C_7- atoms in a neutral molecule appear to be of no consequence to the course of nucleophilic attack.

1/1

1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--IMIDAZOLE DERIVATIVES CONTAINING POTENTIALLY LABILE GROUPS AT THE N
ATOM. V. SYNTHESIS OF 2,BENZYLAMINO AND 2,DIBENZYLAMINOBENZIMIDAZOLES

AUTHOR-(03)-ZVEZDINA, E.A., POZHARSKIY, A.F., SOKOLOV, V.I.

P

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 419-21

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IMIDAZOLE, BENZENE DERIVATIVE, AMINE, ORGANIC SYNTHESIS,
HETEROCYCLIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/C218 STEP NO--UR/0409/70/000/003/0419/0421

CIRC ACCESSION NO--AP0126006

UNCLASSIFIED

CIRC ACCESSION NO--AP0126006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF 1.47 G I (R EQUALS ME, R PRIME1 EQUALS NH SUB2), 1.62 G PHCH SUB2 OH, AND 0.9 G KOH WAS HEATED (FLAME); AT 150DEGREES A STORMY REACTION OCCURRED. THE MIXT. WAS THEN HEATED TO 250DEGREES, AND KEPT 5 MIN AT 250DEGREES TO YIELD 100PERCENT I (R EQUALS ME, R PRIME1 EQUALS NHCH SUB2 PH), M. 167DEGREES (MEOH). SIMILARLY WERE OBTAINED THE FOLLOWING AS SHOWN ON MICROFICHE.

1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--PROPERTIES OF 2,NITROBENZIMIDAZOLES -U-

AUTHOR-(05)-POZHARSKIY, A.F., PERSHIN, G.N., ZVEZDINA, E.A., ZYKOVA, T.N., MILOVANOVA, S.N.

P

COUNTRY OF INFO--USSR

SOURCE--KHIM. FARM. ZH. 1970 4(1) 14-16

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--ORGANIC NITRO COMPOUND, BENZIMIDAZOLE, BACTERICIDE, FUNGICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1520 STEP NO--UR/0450/70/004/001/0014/0016

CIRC ACCESSION NO--AP0112514

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0112514
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2, NITROBENZIMIDAZOLE (I) (0.163
G), 0.08 G NAOH, 4 ML ETOH, AND 0.35 ML MEI YEILDED 0.15 G 1,METHYL,2,
NITROBENZIMIDAZOLE (II), M. 170DEGREES (ETOH); 79.3PERCENT 1,ETHYL
DERIV., M. 105DEGREES (MEOH), WAS ALSO PREPD. II (0.27 G) WAS ALSO
PREPD. FROM 0.26 G I AND 0.156 G CH SUB2 N SUB2 IN 40 ML ET SUB2 O. A
MIXT. OF 0.163 G I, 0.1 G NAOH, 0.25 G PHME SUB2 (PHCH SUB2)N PRIME
POSITIVE CL PRIME NEGATIVE, AND 3 ML H SUB2 O GAVE 0.13 G
1,BENZYL,2,NITROBENZIMIDAZOLE, M. 107DEGREES (MEOH). II (0.15 G),
ETONA (FROM 0.08 G NA), AND 7 ML ETOH YIELDED
1,METHYL,2,ETHOXYBENZIMIDAZOLE (0.12 G), PICRATE M. 163-4DEGREES (ETOH).
II (0.25 G), 0.32 G PHCH SUB2 NH SUB2, AND 5 ML XYLENE YIELDED 0.25 G
1,METHYL,2,(BENZYLAMINO)BENZIMIDAZOLE, M. 167DEGREES (MEOH). THE
COMPDS. WERE TESTED FOR ANTIBACTERIAL (11 STRAINS) AND ANTIFUNGAL (6
STRAINS) ACTIVITY.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--HETEROCYCLIC ANALOGS OF PLEIADIENE. III. REACTIVITY OF THE NITROGEN ATOMS OF PERIMIDINE AND ACEPERIMIDINE -U-
AUTHOR--POZHARSKIY, A.F., KASHPAROV, I.S.

P

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 111-15

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, POLYNUCLEAR HYDROCARBON, OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1693 STEP NO--UR/0409/70/000/001/0111/0115

CIRC ACCESSION NO--AP0104905
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0104905

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PERIMIDINE (I) AND ACEPERIMIDINE (II) UNDERGO OXIDN. WHEN TREATED WITH KOH OR ETOK UNDER AIR, FORMING REPRODUCIBLE YET UNKNOWN PRODUCTS. A SOLN. OF 0.01 MOLE KOH AND 0.01 MOLE RX IN 10 ML ETOH ADDED TO 0.01 MOLE I OR II IN 30 ML ETOH UNDER N AND THE MIXT. BOILED UNDER N 3 HR GAVE THE CORRESPONDING N ALKYLPERIMIDINE (III) OR N ALKYLACEPERIMIDINE (IV). THE FOLLOWING III AND IV WERE THUS PREPD. (X, COMPD., R, M.P. (SOLVENT), PERCENT YIELD, AND PK SUBA IN 10PERCENT AQ. ETOH AT 25 PLUS OR MINUS 1DEGREES GIVEN): I, III, ME, 120-1DEGREES (HEPTANE), 67, 5.86; BR, III, ET, 115-16DEGREES (HEPTANE), 63, 5.93; I, III, PR, 72-3DEGREES (AQ. ETOH), 64, 5.87; I, III, ISO PR, 67-8DEGREES (AQ. ETOH), 35, 5.99; CL, III, PHCH SUB2, 135-6DEGREES (OCTANE), 47, MINUS; I, IV, ME, 201-2DEGREES (AQ. ETOH), 66, 6.16; BR, IV, ET, IV, 120-1DEGREES (AQ. ETOH), 60, 6.14; BR, IV, PR, 60-2DEGREES (HEXANE), 57, MINUS. A MIXT. OF 2 G I, 30 ML MEOH, AND 3 ML 40PERCENT CH SUB2 O KEPT OVERNIGHT GAVE 98PERCENT III (R EQUALS CH SUB2 OH), M. 202-3DEGREES (H SUB2 O). A MIXT. OF 3.36 G I, 50 ML C SUB6 H SUB6, AND 0.8 G MEOCH SUB2 CL BOILED 1 HR GAVE 1.33 G III (R EQUALS CH SUB2 OME), M. 65-6DEGREES (C SUB6 H SUB6).

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--IMIDAZOLE DERIVATIVES CONTAINING POTENTIALLY LABILE GROUPS AT THE N ATOMS. IV. NEW METHOD FOR OBTAINING 1,6,DISUBSTITUTED BENZIMIDAZOLE -U-

AUTHOR--MARYANOVSKIY, V.M., POZHARSKIY, A.F., SIMONOV, A.M.

P

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 216-18

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZIMIDAZOLE, AMINE DERIVATIVE, ALKYLATION, ORGANIC NITRO COMPOUND, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1801 STEP NO--UR/0409/70/000/002/0216/0218

CIRC ACCESSION NO--AP0100375

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11SEP70

2/2 016

CIRC ACCESSION NO--AP0100375

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUATERNIZATION OF 5-ALKYL AND 5-ALKOXY DERIVS. OF 1-BENZIMIDAZOLE (I) TAKES PLACE IN TOLUENE, BUT THE REACTION INVOLVING 5-AMINO DERIVS. IS CARRIED OUT IN ACETONE. DEBENZYLATION WITH NA IN LIQ. NH SUB3 YIELDS UP TO 80PERCENT 6,ALKYL OR 6,ALKOXY,1,BENZIMIDAZOLE. REACTION WITH NA-HG GIVES POORER YIELDS AND THE METHOD CANNOT BE USED FOR THY SYNTHESIS OF 6-BR AND 6-NITRO DERIVS. BENZIMIDAZOLINIUM SALTS WERE PREPD. FROM 5-SUBSTITUTED I (5-SUBSTITUENT, ALKYL HALIDE, AND M.P. GIVEN): -, ETI, 173-4DEGREES; ME, ETI, 173-4DEGREES; MEO, ETBR, 172-3DEGREES; MEO, ETI, 151-2DEGREES; MEO, MEI, 240-1DEGREES, NH SUB2, MEI, 166-7DEGREES; NO, ETI, 169-9.5DEGREES; BR, ETI, 201-2DEGREES. DECOMPN. OF THE SALTS WITH NA GAVE BANZIMIDAZOLES (SUBSTITUENTS, PERCENT YIELD, M.P., B.P., AND M.P. PICRATE GIVEN): 1,ME,6,MEO, 60, 66-7DEGREES, 185-90DEGREES-15 MM, MINUS; 1,ET,6,MEO, 62, MINUS, 180-85DEGREES-13 MM OR 162-7DEGREES-9 MM, 215-16DEGREES; 1,ET,6,ME, 53, MINUS, 205-10DEGREES-2, 256-7DEGREES; 1,ME,6,NH SUB2, 70, MINUS, 180-85DEGREES-4 MM, 225-7DEGREES. THE 5-AMINO DERIV. OF I M. 155-6DEGREES WAS PREPD. IN 67PERCENT YIELD FROM THE CORRESPONDING NITRO COMPD. BY REDN. WITH SNCL SUB2-HCL. THE DECOMPN. OF THE SALT FROM ETI AND 3,ET,5,BR DERIV. OF I WITH NA GAVE ONLY 1 ETHYLBENZIMIDAZOLE.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 021

TITLE--HETEROCYCLIC ANALOGS OF PLEIADIENE. II. GENERAL EXAMINATION OF SYSTEMS CONTAINING A PYRROLE TYPE NITROGEN ATOM. PARTICIPATION OF A

AUTHOR--POZHARSKIY, A.F., MALYSHEVA, YE.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 103-10

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL BONDING, MOLECULAR ORBITAL, ELECTRON STRUCTURE, QUINONE, PYRROLES, AMINE DERIVATIVE, HETEROCYCLIC BASE COMPOUND, ELECTRON DENSITY, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1050

STEP NO--UR/0409/70/000/001/0103/0110

CIRC ACCESSION NO--AP0104448

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104448

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. PI BOND ORDERS, PI ELECTRON D., ENERGIES OF THE HIGHEST OCCUPIED MO, TOTAL PI ELECTRONIC ENERGIES, AND ENERGIES OF THE 1ST PI-PI TRANSITIONS WERE CALCD. BY HUECKEL MO APPROXNS. (OVERLAP INTEGRALS NEGLECTED) FOR I AND II (X AND Y EQUALS N AND CH). WHEREAS IN MOST COMPDS. STUDIED, PARTICIPATION OF A PYRROLE TYPE N ATOM IN AROMATIC SIX MEMBERED RING IS ACHIEVED BY FORMATION OF QUINONE STRUCTURES, DISOBEYANCE OF THE HUECKEL RULE, OR NONPLANARITY OF THE MOL. I FORM THE MOST TYPICAL HETEROAROMATIC SYSTEMS CONTG. A PYRROLE TYPE N ATOM. CHEM. BEHAVIOR OF I IS DISCUSSED AND COMPARED TO THAT OF II.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--NATURE OF THE INTERACTION OF PHENYL AND IMIDAZOLE RINGS IN N,ARYLIMIDAZOLES. IV. DERIVATIVES OF 1,PHENYLIMIDAZOLE WITH SUBSTITUENTS

AUTHOR--POZHARSKIY, A.F., SITKINA, L.M., SIMONOV, A.M., CHESOLYA, T.N.

P

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN 1970, (2), 209-13

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, IMIDAZOLE, ELECTRON ACCEPTOR, ELECTRON DONOR, DIPOLE MOMENT, IONIZATION CONSTANT, UV SPECTRUM, MOLECULAR INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1803 STEP NO--UR/0409/70/000/002/0209/0213

CIRC ACCESSION NO--AP0100377

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100377

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE UV ABSORPTION SPECTRA OF SUBSTITUTED 1,PHENYLIMIDAZOLES WERE RECORDED. THE INTRODUCTION OF ELECTRON ACCEPTOR GROUPS INTO THE BENZENE RING EXERTS A BATHOCHROMIC SHIFT WHILE THE ELECTRON DONOR GROUPS HAVE LITTLE EFFECT. THE DIPOLE MOMENTS MU (IN D), IONIZATION CONSTS. (PK SUBA), AND THE RATE CONST. K OF THE REACTION WITH ETI (10 PRIME NEGATIVE6 1. MOLE PRIME NEGATVE1 SEC PRIME NEGATIVE1) FOR I WERE (R MU, PK SUBA, AND K GIVEN): H, 3.50, 5.10, 15.7; P-ME, 3.90, 5.24, 19.0; M-ME, 3.73, 5.24, 16.9; OMICRON-ME, 3.79, -, -; P-BR, 2.20, 4.91, 11.0; P-OH, 5.48, 5.35, 22.6; P-AC, 2.89, 4.54, 10.8; P-O SUB2 N, 1.55, 3.96, U.8; M-O SUB2 N, 3.63, -, -; P-MEO, -, 5.23, 19.6. THE IMIDAZOLE GROUP IN I BEHAVES AS AN ELECTRON DONOR.

USSR

UDC 547.785.5'821.07

POZHARSKIY, A. F., KUZ'MENKO, V. V., KOLODYAZHNYY, YU. V., SIMONOV, A. M., Rostov State University, Rostov-na-Donu

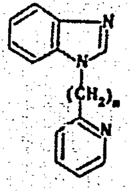
"Relative Reactivity of the Pyrindine and Benzimidazole Systems in the Chichibabin Reaction"

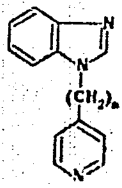
Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1252-1263

Abstract: Some 1- α (or γ)-pyridiyl and 1- α (or γ)-pyridylethyl-benzimidazoles were synthesized and their reactivity to methyl iodide and sodamide was studied. The results are discussed from the point of view of basicity, the magnitude of the dipole moments, the mutual effect of heterorings and the distribution of electron density in them, calculated or estimated from the relative position of the chemical shifts in the paramagnetic resonance spectra. The benzimidazole system enters into the Chichibabin reaction appreciably more easily than the pyridine system. On the basis of the paramagnetic resonance spectral data for bases and cations of pyridine and benzimidazole it is proposed that this phenomenon arises from the high degree of polarizability of the C=N bond of the benzimidazole by comparison with the C=N bond of the pyridine on their coordination with $NaNH_2$. The protonation point of compounds I and II

USSR

POZHARSKIY, A. F., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1252-1263


I а,б


II а,б

а n=0; б n=1

the nature of the interaction of the imidazole and pyridine rings in N-pyridylbenzimidazoles and the reaction of N-pyridylbenzimidazoles to sodium amide are discussed. The procedures for synthesizing a number of the indicated compounds, the method of measuring the ionization constants, taking the paramagnetic resonance spectra, performing the quantummechanical calculations and determining the dipole moments are described.

2/2

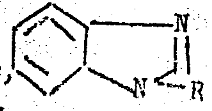
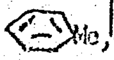
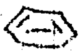
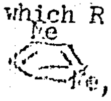
USSR

UDC 547.781.5.785.5

FILIPSKIKH, T. P., POZHARSKIY, A. F., KOROLEVA, V. N., SIMONOV, A. M., and ZVEZDINA, E. A., Rostov State University, Rostov-on-Don

"Derivatives of Imidazole Containing Potentially Labile Groups at the N_1 Atom. VI. Some 2-Amino Derivatives of 1-Aralkyl- and 1-Methoxymethylbenzimidazoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy. No 6, Jun 72, pp 809-811

Abstract: By reacting benzimidazole with substituted benzyl chlorides and the Ag salt of benzimidazole with benzhydrylchloride, 1-aralkylbenzimidazoles  (I) were obtained, in which R = -CH_2  -CH_2  $CHMe_2$, -CH_2  -$CHPh_2$. By the action of $NaNH_2$ on compounds I, an amino group was introduced in position 2 of the benzimidazole nucleus. In this manner, the 1-aralkyl-2-aminobenzimidazoles (II) derived from I were synthesized. By reacting the Na salt of 2-aminobenzimidazole with methoxymethyl chloride, 1-methoxymethyl-2-aminobenzimidazole (III) was prepared. Compounds II-III were required for the generation of highly reactive 2-aminobenzimidazole anions by the reductive cleavage of the N-R bond with Na in liquid NH_3.

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USSR

POZHELA, Yu.

"Hot Electrons"

Yerevan, Promyshlennost' Armenii, No 5, 1973, pp 76-78

Abstract: The paper discusses the action of a microwave electric field on the crystal lattice of a semiconductor material. Conditions are discussed under which the applied field transfers energy to the electron gas without disturbing the crystal lattice. The requirements are reduced to three: a strong applied field, a long mean free path, and elastic scattering. This situation is satisfied with modern semiconductor single crystals in which the electrons can be heated to 2000°C with the application of a field of a few kv/cm, while the crystal lattice remains at room temperature, and if the semiconductor is cooled to liquid nitrogen temperatures, the electron gas is heated to 5000°C by the same field. The production of high field intensity domains (Gunn effect) is explained, as well as the generation of high thermoelectromotive forces by an effect analogous to the thermocouple effect in which electrons are heated by an electric field even past the melting point of the lattice. Some related effects observed at the Insti-

USSR

POZHELA, Yu., Promyshlennost' Armenii, No 5, 1973, pp 76-78

tute of Semiconductor Physics of the Academy of Sciences of the Latvian SSR are: electron emission under the effect of a microwave field; thermo- and photo-emf's induced by hot electrons; frequency multiplication; negative resistance to direct current in which the current flows opposite to the direction of the applied voltage. One of the applications of hot electrons is in microwave power meters. A technological base has been set up at the Institute of Semiconductor Physics to develop hot-electron instruments.

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USSR

KONIN, A. M., POZHELA, Yu. K., and YANAVICHENE, N. Yu. (Institute of the Physics of Semiconductors, Lithuanian Academy of Sciences)

"Galvanomagnetic Recombination Effect in an Inhomogeneous Magnetic Field"

Vilnius, Litovskiy Fizicheskiy Sbornik, No 3, 1973, pp 393-399

Abstract: An intrinsic semiconductor in a homogeneous magnetic field changes its resistance as a consequence of the redistribution of the current carriers along the cross section of a sample having different surface recombination rates on opposite sides, one of them being low. Carrier redistribution takes place at a distance λ_0 of the diffusion length.

In an inhomogeneous magnetic field a change in resistance takes place when the surface recombination rates on both sides are high.

In this paper the authors solve the problem for the case of weak fields and a linear variation of the magnetic field. It is shown that the change in concentration in this case occurs not only at a distance from the sides of the sample but also along its entire cross section. The change in resistance takes place also when the surface recombination rates on both sides are high.

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USSR

KONIN, A. M., et al., Litovskiy Fizicheskiy Sbornik, No 3, 1973, pp 393-399

The experimental qualitatively confirms the calculations: 1) the change in resistance takes place only in the presence of grad H; 2) it increases with an increase in the thickness of the sample.

USSR

UDC: 537.226+537.311.33]: [537+535

LEVITAS, I. S., POZHELA, Yu. K., and SASHCHUK, A. P.

"Galvanomagnetic Recombination Effect in Alternating Electric and Magnetic Fields"

Vil'nyus, Litovskiy Fizicheskiy Sbornik, No 5, 1972, pp 825-834

Abstract: The galvanomagnetic recombination effect is defined as the phenomenon occurring in semiconductors with both signs of current carrier when there is a loss of equilibrium of current carriers in a magnetic field due to the different velocities of surface recombination in facing boundaries. A table is given for assistance in the computation of the electric and magnetic fields and for the transformation of alternating into direct signals as applied to certain particular cases, without taking the phase shift into account. The authors also measured some characteristics of sensors of the galvanomagnetic recombination effect in alternating magnetic and electric fields at frequencies less than the critical value; results of the measurements are given in the form of curves. One of the functions of this article is to indicate the broad possibilities of using sensors of the effect for measuring magnetic fields in linear signal multiplication circuits.

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USSR

UDC [537.226+537.311.33]:[537+535]

BAGOCHYUNAYTE, R. I., [redacted] SKUCHAS, YU. P., SKUCHENE, A. L., and SHIMULITE, YE. A.

"Effect of Intercrystalline Barriers on Physical Properties of CdTe Thin Polycrystalline Films"

V sb. Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds With Metals of Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, pp 69-90 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE691 by V. B. SANDOMIRSKIY)

Translation: The authors investigated static and dynamic current-voltage characteristics of CdTe polycrystalline films. Photoelectromotive forces were measured. It is believed that the results can be explained if a film is conceived of as a system of crystallites in contact, described by the model of an asymmetrical n-n junction with blocking band bending at the interface.

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USSR

UDC [537.226+537.311.33]:[537+535]

KALINAUSKENE, B. I., LAPINSKAS, I. I., [redacted], and SHIMULITE, YE. A.

"Investigation of Electrical Conductivity of Fine-Grained Semiconductor Systems in a Constant and Microwave Field"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 2, pp 263-268 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE660 by authors)

Translation: The authors investigated the resistance of fine-grained Ge and Si systems as a function of constant and microwave field intensity. The resistance of such systems decreases with an increase in both the constant and microwave field applied to them.

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USSR

UDC [537.226+537.311.33]:[537+535]

ASHMONTAS, S. P., POZHELA, YU. K., and REPSHAS, K. K.

"Bigradient Electromotive Force of Hot Current Carriers"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 2, pp 243-245 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE757 by authors)

Translation: The article presents experimental results of the investigation of the bigradient electromotive force of hot current carriers: i.e., the electromotive force appearing in a homogeneous semiconductor specimen on the creation therein of two different gradients of the warming electric field. Such warming up was brought about by the special shape of the specimen. Investigations were conducted on n-Ge specimens at room temperature by the microwave method and the d-c pulse method. The authors obtained the dependence of the bigradient electromotive force of hot current carriers on the strength of the electric microwave field in a wave guide.

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USSR

UDC [537.226+537.311.33]:[537+535]

POZHELA, YU. K., RYAUKA, V. L., and TOLUTIS, R. B.
[redacted]

"Dimensional Resonances of Helicon Waves in Axially Compressed n-Ge"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 2, pp 253-261 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE785 by authors)

Translation: An investigation was made of the effect of axial compression P on the frequency of dimensional resonances ω' of helicon waves in n-Se. Curves of ω'/B as a function of the induction of magnetic field B were calculated for axial compression P in the [110] and [$\bar{1}$10] crystallographic directions when $k /\!/ B /\!/ [110]$, as well as $P /\!/ [111]$ when $k /\!/ B /\!/ [111]$. It was established that the form of curves $\omega'/B=f(B)$ and the absolute values of ω'/B with variation of P reflect the redistribution of current carriers among groups with different mobility. Dependences $\omega'/B=\psi(P)$ were experimentally obtained with the above-mentioned orientations P, B, and k. It was found that the quality factor of the helicon resonator depends on the magnitude and direction of P relative to the crystallographic axes. The experimental results confirm the theoretical calculations.

1/1

USSR

UDC [537.226+537.311.33]:[537+535]

LAURINAVICHUS, A. K., and POZHELA, YU. K.

"Investigation of Helicon Waves in n-InSb Specimens in Microwave Range According to Magnetoreflection"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 1, pp 65-71 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE786 by authors)

Translation: An experimental investigation was made of helicon waves in n-InSb specimens according to magnetoreflection of circularly polarized waves at frequency $f=36.910 \cdot 10^9$ Hz. Measurements were made at the temperature of liquid nitrogen and at constant magnetic field induction up to 1 tesla. A comparison was made of the theoretical and experimental dependence of the reflection coefficient as a function of magnetic induction for specimens with known free charge carrier concentration and mobility. For specimens with a low carrier concentration, magnetoplasma resonance is observed in the magnetoreflection. To increase resolution of dimensional resonances during the investigation of helicon waves in the region of weak magnetic fields, matching quarter-wave dielectric plates were used.

1/1

USSR

UDC 621.376.2

BRAZIS, R. S., VALATSKA, K. K., MACHYULAYTIS, Ch. V., POZHELA, Yu. K., Institute of Physics of Semiconductors, Academy of Sciences of the Lithuanian SSR

"An Amplitude Modulator"

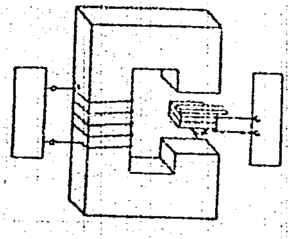
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, Feb 72, Author's Certificate No 326700, Division H, filed 7 Apr 70, published 19 Jan 72, pp 207-208

Translation: This Author's Certificate introduces an amplitude modulator which contains a supply source connected to the winding of an electromagnet, and a semiconductor plate which is placed in the fixed magnetic field of the electromagnet perpendicular to its broad planes. The device also contains carrier-frequency input and output circuits placed across the wide faces of the plate, and a source of modulating voltage. As a distinguishing feature of the patent, speed is increased by making the semiconductor plate with deep-lying plane junctions (e. g. of the PN type), and by connecting the ohmic contacts on both sides of the junction directly to the source of modulating voltage.

1/2

USSR

BRAZIS, R. S. et al., USSR Author's Certificate No 326700



2/2

USSR UDC: [537.226+537.311.33]:[537+535]

LAURINAVICHYUS, A. K. and POZHELA, Yu. K.

"Angular Reflection of Microwaves from Laminar Specimens of n-InSb in Which Helicon Waves are Propagated"

Lit. fiz. sb. (Lithuanian Physics Collection) No. 3, 11, 1971, pp 457-460 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E1109)

Translation: With angular incidence of an electromagnetic wave on a magnetized solid plasma of laminar n-InSb, two reflected waves are obtained, one of which is propagated perpendicular to the surface of the specimen and is caused by the reflection of the helicon from the rear wall of the specimen. The experiment was conducted at a frequency of 38.2 GHz and a temperature of 77° K.

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USSR UDC: [537.226+537.311.33]:[537+535]

ASHMONTAS, S. P., POZHELA, Yu. K., and REPSHAS, K. K.

"Photogradient EMF of Thermal Current Carriers in Germanium and Silicon"

Lit. fiz. sb. (Lithuanian Physics Collection) No. 3, vol. 11, 1971, pp 451-456 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E1139)

Translation: The results are given of an investigation into the photogradient emf of thermal current carriers in Ge (n and p type) and Si (n type) at $T_0 = 300°$ K. In the case of n-Ge, a reduction was experimentally observed in the growth rate of the photogradient emf with the electric field intensity, beginning with fields of $E > 5000$ V/cm, which fact is explained by the effect of the nonequivalent <100> valleys on the electron heating. Computations of the photogradient emf were made with approximate electron and hole temperatures computed from equations of energy balance. Author's abstract

1/1

Crystals & Semiconductors

USSR

POZHELA, YU. K., RYAUKA, V. L., et al (Institute of Semiconductor Physics, Lithuanian Academy of Sciences)

"Dispersion of Magnetoplasma Waves in $Bi_{0.92}Sb_{0.08}$ Under Hydrostatic Pressure"

Vilnius, Litovskiy Fizicheskiy Sbornik, No 4, 1973, pp 535-543

Abstract: The dispersion of magnetoplasma waves (MPW) in single crystalline $Bi_{0.92}Sb_{0.08}$ under hydrostatic pressures $P = 0$ and $P = 7$ kbar was investigated. The external magnetizing field B_z parallel to the wave vector k was oriented along one of the crystalline axes. Experiments were carried out by means of the size resonance technique at 77°K. Propagation of MPW at $P = 0$ is associated with electrons of strongly anisotropic ellipsoids in the extremum L_a. Holes of the extremum T_{45} participate in MPW dispersion only when $B_z \parallel k$ is oriented along trigonal axis C_3. From experimental results the concentration of electrons ($n = 8 \cdot 10^{22} m^{-3}$) participating in the MPW propagation was determined, and values of electron cyclotron mobilities $\mu^e_{c^3} = 5 m^2 \cdot V^{-1} \cdot sec^{-1}$ and $\mu^e_{c^2} = 45 m^2 \cdot V^{-1} \cdot sec^{-1}$ were calculated for the cases

USSR

POSHELA, YU. K., et al., Litovskiy Fizicheskiy Sbornik, No 4, 1973, pp 535-543

$B_z \parallel C_3$ and $B_z \parallel C_2$ respectively. At $P = 7$ kbar a decrease of approximately 60% in the electron concentration was observed. This decrease is associated with transfer of holes from the extremumTT-$_{45}$ into the extremum L under the influence of pressure. Under a hydrostatic pressure of 7 kbar an increase of electron cyclotron mobilities (40% in the case of $B_z \parallel C_3$) and their anisotropy were observed.

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USSR UDC 621.315.592

BANIS, T. YA., PARSHELYUNAS, I. V., POZHELA, YU. K.

"Absolute Negative Resistance of Gallium Arsenide under the Effect of a Strong Superhigh-Frequency Field on It"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 10, October 1971, pp 1990-1992

Abstract: A study was made of low-ohmic electron gallium arsenide in strong superhigh-frequency fields. Under the effect of the strong electric field of a wave guide, a filamentary test piece of gallium arsenide has a negative external resistance. Both the static u/i and the differential du/di resistances have a negative sign in this case. An explanation is offered for this phenomenon, and experimental curves are presented showing the constant current component of electronic gallium arsenide ($\rho = 0.4$ ohm-cm) as a function of the constant external voltage under the effect of the variable field of a wave guide at a frequency of 9 gigahertz on the test piece. The negative differential resistance of gallium arsenide in the vicinity of the origin of the coordinates permits oscillation generation to be obtained by direct connection of an oscillatory circuit to the test piece. These oscillations were obtained experimentally with a parallel circuit on the order of 10 megahertz.

1/1

USSR

UDC: 537.311.33

BANIS, T. YA., DARGIS, A. YU., and POZHELA, YU. K.

"Constant Electromotive Force Appearing During the Effect of Multiple Frequency Super-High Frequency Electric Fields on a Semiconductor"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No 8, 1970, pp 1695-1700

Abstract: The authors study the harmo-electromotive force, constant emf, which appears in a homogeneous cavity-type semiconductor with symmetric, non-linear electrical conductivity where the semiconductor is located in a super-high frequency, not purely sinusoidal, electric field. The harmo-current, harmo-emf, and the harmonic component functions for the electric field are calculated to the sixth harmonic inclusively. Real computations were performed for n-Ge, n-Si, for an inertionless instance, and for instances of electrical conductivity time lag manifestations. The calculated quantitative relationships and the interpretations of the phenomena were proven experimentally. Original article: six figures, five formulas, and seven bibliographic entries.

1/1

1/2 039 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--CURRENT INSTABILITY OF N GERMANIUM WITH A NICKEL IMPURITY IN STRONG ELECTRIC FIELDS -U-

AUTHOR-(03)-KLIMKA, L., KALVENAS, S., POZHELA, YU.K.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 407-9

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SEMICONDUCTOR IMPURITY, NICKEL, ANTIMONY, GERMANIUM SEMICONDUCTOR, VOLT AMPERE CHARACTERISTIC, CARRIER DENSITY, PHOTOCONDUCTIVITY, ELECTRIC FIELD, RECOMBINATION COEFFICIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0076 STEP NO--UR/0449/70/040/002/0407/0409

CIRC ACCESSION NO--AP0105167

UNCLASSIFIED

2/2 039
CIRC ACCESSION NO--AP0105167 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CRYSTALS OF N TYPE GE DOPED WITH PROCESSING DATE--16OCT70
NI TO A CONCN. OF (1-2) TIMES 10 PRIME15-CM PRIME3 EXHIBIT SUBLINEAR
CURRENT-VOLTAGE CHARACTERISTICS AT 77PERCENT, BEGINNING AT FIELDS OF
SIMILAR TO 20 V-CM, USING SB AS THE COMPENSATING IMPURITY. THE RATIO OF
THE CONCN. OF NI TO SB ATOMS IS SUCH THAT 2N SUBNI IS GREATER THAN N
SUBSB IS GREATER THAN N SUBNI, SO THAT THE SPECIMENS EXHIBIT INCOMPLETE
COMPENSATION OF THE UPPER NI LEVEL, E SUBC-E SUB2 EQUALS 0.3 EV, AND ON
REDUCING THE TEMP., THE CONCN. OF EQUIL. CARRIERS FALLS EXPONENTIALLY.
AT 77DEGREES, MONOPOLAR ELECTRONIC PHOTOCOND. IS OBSD., AND IN THIS CASE
THE RELAXATION TIME FOR NONEQUIL. PHOTOCOND. IS DETED. BY THE LIFETIME
OF THE ELECTRONS RECOMBINING AT THE SINGLY CHARGED NEG. NI IONS, WHICH
ARE PRESENT IN MUCH HIGHER CONCN. THAN THE ELECTRONS IN THE BAND ARISING
FROM IRRADN. IN THE REGION OF CHARACTERISTIC EQUIL. LIGHT ABSORPTION.
THE COEFF. OF RECOMBINATION IN A FIELD OF 100 V-CM INCREASES ON THE AV.
BY A FACTOR OF 2 COMPARED WITH OTHER DEEP RECOMBINATION CENTERS, FOR
EXAMPLE THE SINGLY CHARED AU CENTER IN GE. THE DIFFERENTIAL COND. CAN
BE WRITTEN IN THE FORM SIGMA SUBD EQUALS EN MU (L PLUS (D LN N MU-D LN
E)), WHERE MU IS THE CARRIER MOBILITY. IF THE CARRIER CONCN. DECREASES
SUFFICIENTLY RAPIDLY ON INCREASING THE FIELD INTENSITY, THE RIGHT HAND
SIDE OF THE ABOVE EQUATION BECOMES NEG. BEGINNING AT FIELDS OF SIMILAR
TO 10 V-CM, CURRENT OSCILLATIONS IN THE EXTERNAL CIRCUIT RESULTING FROM
THE MOTION OF DOMAINS ARE OBSD., WHILE THE MAX. CURRENT CORRESPONDS TO
THE MOMENT OF DISAPPEARANCE OF THE MOVING DOMAIN AT THE CONTACT.
FACILITY: INST. FIZ. POLURPV., VILNIUS, USSR.

UNCLASSIFIED

P

UDC 621.396.69:621.314.2

USSR

POZHELA, Yu. K., TOLUTIS, R. B., Institute of Physics of Semiconductors, Academy of Sciences of the Lithuanian SSR

"A High-Frequency Transformer"

USSR Author's Certificate No 254601, Filed 9 Apr 68, Published 11 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V374 P)

Translation: The proposed high-frequency transformer contains a core, and input and output windings. As a distinguishing feature of the patent, rectifying properties are imparted to the transformer by making the core in the form of a square semiconductor plate of N type ZnSb mounted between the poles of a permanent magnet, and arranging the input and output windings at an angle close to a right angle. The initial ends of the windings are interconnected through a resistor, and the terminal leads are shorted together.

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1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CURRENT INSTABILITY OF N TYPE GERMANIUM CONTAINING NICKEL IMPURITY IN STRONG ELECTRIC FIELDS -U-

AUTHOR-(03)-KLIMKA, L.S., KALVENAS, S.P., POZHELA, YU.K.

P

COUNTRY OF INFO--USSR

SOURCE--FIZIKA I TEKHN. POPUPROV., FEB. 1970, 4 (2), 407-409

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM SEMICONDUCTOR, ELECTRIC FIELD, CURRENT STABILIZATION, VOLT AMPERE CHARACTERISTIC, TEMPERATURE DEPENDENCE, ELECTRON MOBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0449/70/004/002/0407/0409
PROXY REEL/FRAME--2000/1285

CIRC ACCESSION NO--AP0124936
UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124936

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM RESPONSIBLE FOR THE DEVELOPMENT OF CURRENT INSTABILITIES IN N TYPE GE CONTG. TRACES OF NI IN STRONG ELECTRIC FIELDS (E.G., 100 V-CM) IS DISCUSSED IN THE LIGHT OF EXISTING DATA AND NEW EXPERIMENTAL INVESTIGATIONS. THE ELECTRIC FIELD HEATS THE CARRIERS (THIS IS SHOWN BY THE FACT THAT THE MOBILITY AND LIFE TIME OF THE LATTER VARY WITH APPLIED FIELD) AND MAY LEAD TO THE DEVELOPMENT OF NEGATIVE DIFFERENTIAL CONDUCTIVITY. THUS THE V-A CHARACTERISTIC BECOMES NONLINEAR AT FIELDS OF 20 V-CM AND OVER AT 77DEGREESK. 11 REF.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--HELICONS IN N TYPE GERMANIUM -U-

AUTHOR-(02)-POZHELA, YU.K., TOLUTIS, R.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1), 110-15

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM SEMICONDUCTOR, ELECTRIC CONDUCTIVITY, CRYSTAL ANISOTROPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1823 STEP NO--UR/0449/70/004/001/0110/0115

CIRC ACCESSION NO--AP0054657
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054657

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPONENTS WERE DETD. OF THE ELEC. COND. TENSOR IN A MAGNETIC FIELD PARALLEL TO THE CRYSTALLOGRAPHIC AXES (100), (110), AND (111); THE EFFECTIVE MASS ANISOTROPY AND THE ANISOTROPY OF THE COLLISION FREQUENCIES WERE TAKEN INTO ACCOUNT. THE REAL AND IMAGINARY PARTS OF THE WAVE VECTOR AND THE DIMENSIONAL RESONANCE OF HELICON WAVES WERE CALCD. A RATIO WAS DETD. BY COMPARING THE THEORETICAL RESULTS WITH EXPTL. DATA: K EQUALS M SUBL T SUBT M SUBT T SUBL APPROXIMATELY EQUALS TO 19, WHERE M SUBL, T SUBL, M SUBT, AND T SUBT CORRESPOND TO MASSES AND RELAXATION TIMES OF ELECTRONS ALONG THE LONGITUDINAL AND TRANSVERSE AXES OF THE CONST. ENERGY ELLIPSOID, RESP. THE HELICON WAVE ANISOTROPY WAS FOUND EXPTL. AT 300DEGREESK IN A DIMENSIONAL RESONANCE REGIME.

UNCLASSIFIED

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USSR UDC[537.226+537.311.33]:[537+535]

BAREYKIS, V. A., GUOGA, V. I., MATULENENE, I. B., POZHELA, YU. K., and REPSHIS, V. I.

"Investigation of the Warming-Up of Current Carriers in Nonrectifying Point Contact"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 1, pp 73-79 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE666 from summary)

Translation: The authors measured noise temperature and thermoelectromotive force of hot holes as a function of bias voltage for p-Ge specimens with nonrectifying point contact at room temperature. It is shown that in the point contact the electric field warms the current carriers. For a bulk specimen values of noise temperature for point contact were compared with noise temperature as well as with carrier temperature determined according to thermoelectromotive force measurements.

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UDC 543.45(047)

USSR

AYOLLO, Z. S., DEVDARIANI, M. V., KARABEGOV, M. A., KONRAKOV, YU. I., POZHIDAYEV, G. M.

"General Industrial Automatic Refractometers of the State Instrument System"

Dokl. Vses. soveshch. Optich. i titrometrich. analizatory zhidk. sred, 1971. Ch. 2 (Reports of the All-Union Conference on Optical and Titrometric Analyzers of Liquid Media, 1971, Part 2), Tbilisi, 1971, pp 9-20 (from RZh--Metrologiya i Izmeritel'naya Tekhnika, No 3, Mar 72, Abstract No 3.32.1043)

Translation: The results of interrogating 178 scientific research planning and design organizations and production enterprises representing the parameters of 427 technological media are classified. The interrogation has as its purpose the discovery of the requirements imposed on automatic refractometers for liquid materials. It was found that the automatic refractometers must have technical characteristics insuring their operation under the conditions of variation of the index of refraction from 1.3 to 1.7, a difference range of the index of refraction from $5 \cdot 10^{-4}$ to $1 \cdot 10^{-4}$ with a measurement accuracy no worse than $1 \cdot 10^{-4}$ to $5 \cdot 10^{-4}$% at temperatures of the measured medium from +20 to +120°C with fluctuations with respect to a given point from ±2 to ±5° C. The analysis of the technical characteristics of the existing automatic refractometers

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USSR

AYOLLO, Z. S., et al., Dokl. Vses. soveshch. Optich. i titrometrich. analizatory zhidk. sred, 1971. Ch. 2, Tbilisi, 1971, pp 9-20

permits establishment of the fact that the majority of them correspond to the requirements of specific technological processes, and only a few have the possibility of adjustment of the measurement ranges. A survey of methods of varying the measurement ranges of various types of automatic refractometers is presented, and their relative advantages and disadvantages are noted, including modular construction developed by the special design office of automatic refractometers for the D1RP-D and D2RP-D automatic refractometers. The correspondence of these automatic refractometers to the requirements of GOST 14941-69 is established. The USSR State Standards Committee gave permission to manufacture the instruments for delivery to the CEMA countries. The instruments are being manufactured by the Kiev Analytical Instrument Plant. There are 2 illustrations and 2 tables.

2/2

2

USSR

UDC 535.322.4.08

AYOLLO, E. S., DMITRIYEV, A. V., KARABEGOV, M. A., KOMRAKOV, YU. I., POZHIDAYEV, G. M., SIMONYAN, G. A.

"New Wide-Range Automatic Refractometer for Monitoring the Course of Technological Processes"

Dokl. Vses. soveshch. Optich. i titrometrich. analizatorov zhidk. sred. 1971. Ch. 2 (Reports of the All-Union Conference on Optical and Titrometric Analyzers of Liquid Media, 1971, Part 2), Tbilisi, 1971, pp 39-44 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 3, Mar 72, Abstract No 3.32.1044)

Translation: At the present time, among automatic industrial refractometers, the systems with optical compensation for the deviations of the light beam, displacement of the light shadow interface and under variables which are a function of the index of refraction have become most widespread. The schematic and description of an automatic refractometer developed by the Special Design Office for Analytical Instrument Making are presented. This refractometer permits an increase in the dynamic measurement range by several times while retaining the given instrument error. It also permits a five-fold increase in the accuracy of measuring the concentration of the substance. There are 2 illustrations and 1-entry bibliography.

1/1

UDC 519.21

USSR

POZHIDAYEV, V. F., SEMESENKO, M. P.

"Estimate of Asymptotic Representation of Spectral Density of Random Processes"

Tekhn. Kibernetika. Vyp. 6 [Engineering Cybernetics, No 6 -- Collection of Works], Kiev, 1970, pp 29-37, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V174 by V. Makovskiy).

Translation: This work is a continuation of work published earlier (RZhMat, 1970, 8V98) and consists of a very carefully performed estimate of the residual term in an asymptotic representation of the spectral density of random processes. An example is presented of the use of the approximation of spectral density suggested.

1/1

5

Ref. Code: UR 0240

Acc. Nr.: AP0029510

P

PRIMARY SOURCE: Gigiyena i Sanitariya, 1970, Nr 1, PP 61-66

FEATURES TO PECULIAR GLOBAL CESIUM-137 AND STRONTIUM-90 REACHING THE POPULATION OF POLECIA BY DIFFERENT FOOD SUPPLY ROUTES

A. N. Marey, R. M. Barkhudarov, V. K. Chumak, E. V. Petukhova, E. B. Tyuryukanova, G. A. Kuznetsova, N. Ya. Novikova, S. B. Pozhivilova, G. A. Bogdanovich

The paper presents investigation data on the order of passage of abovementioned isotopes from the soil into food products with due regard for the soil nature and the accumulation of isotopes in the human body. The finding was that the extent of the passage of cesium-137 from the soil into food products fluctuated considerabley and depended on the type of soil. Thus, in a soil consisting mainly of a sand fraction the passage of cesium-137 was more pronounced. Similar observation were made in respect to all of the objects examined. However, no differences in the migration of strontium-90 could be detected. Due to the high passage of cesium-137 into food products its content in the human body was high as well.

Jm

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REEL/FRAME

19681111

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1/2 041 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--HYDRAULIC PRINCIPLES OF BUBBLING -U-

AUTHOR-(05)-POZIN, L.S., TYLES, V.G., AKSELROD, L.S., AEROV, M.E.,
BYSTROVA, T.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 271-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PRESSURE GRADIENT, PRESSURE MEASUREMENT, GAS FLOW, STATIC
PRESSURE, WATER, TWO PHASE FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1649 STEP NO--UR/0153/70/013/002/0271/0276

CIRC ACCESSION NO--AT0133554

UNCLASSIFIED

2/2 041 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AT0133554

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM STUDIES OF THE STATIC HEAD OF LIQ. (WATER) AT VARIOUS POINTS ABOVE A 8-MM THICK, 200-MM DIAM. PERFORATED PLATE WITH 31 HOLES OF 3-MM DIAM. AND AT AIR VELOCITIES OF 30-400 M-SEC. THROUGH THE ORIFICES, THE FOLLOWING EQUATION WAS DEVELOPED FOR THE COEFF. K, CHARACTERIZING THE DECREASE IN MEASURABLE STATIC HEAD COMPARED TO THE ACTUAL HEAD: GAMMA SUBL (BAR H MINUS BAR H) EQUALS K (GAMMA SUBG W SUBO PRIME2-2G). WHERE GAMMA AND GAMMA SUBG ARE THE DS. OF LIQ. AND GAS, BAR H AND BAR H ARE THE EFFECTIVE AND AV. MEASURED STATIC LIQ. HEADS, AND W SUBO IS THE GAS VELOCITY. THE EXPT. VALUES OF K FOR THIS STUDY WAS 0.0167 WHICH COMPARES WELL WITH A CALCD. VALUE OF 0.014, AND WITH OTHER DATA IN THE LITERATURE. FACILITY: MOSK. INST. KHIM. MASHINOSTR., MOSCOW, USSR.

UNCLASSIFIED

POZIN, N.V.

neurology

GLORIA

150. USSR - Neurology SO: Foreign Press Digest 30 Apr 1971 UDC 519.95

POZIN, N. V.

Modelirovaniye Neyronnykh Struktur (Modeling Neuronal Structures), Moscow, "Nauka" Publishing House, 1970, 259 pp

Excerpts:

Annotation: Results of theoretical studies of the mechanisms of controlling processes in the nervous system are presented in the book. It gives the current concepts of the informational transformations occurring in brain regions: beginning with the main element -- the nerve cell -- and ending with models of levels performing complex functions.

Most of the book deals with studies of neuronal synapses, which can be regarded as quite typical "modular" junctions of complex neuronal structures. The functioning of homogenous neuronal layers with lateral synapses is analysed. Neuronal schemes serving functions of continuous logic are presented. The possibility of logic schemes comparing signals at terminals "greater", "lesser", or "equal" leads to a synthesis of nets capable of classifying ensembles of continuous signals. In studying the dynamic characteristics of neuronal formations, transitional processes in

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USSR UDC 621.355.8(088.8)

POZIN, Yu. M., GOLUB, Yu. S., NIKOL'SKIY, V. A.

"Method of Preparation and Use of Alkaline Battery"

USSR Author's Certificate No 300915, Filed 20/01/70, Published 26/05/71, (Translated from Referativnyy Zhurnal, Khimiya, No 2, 1972, Abstract No 2 L216 P by the author's).

Translation: A method is suggested for preparation and use of alkaline batteries by formation of charge and discharge cycles, differing in that in order to increase the specific electrical characteristics and produce additional capacitance of the negative electrodes, a discharged battery is pole switched bypassing a quantity of electricity equal to 20-80% of the capacity of the positive electrodes through it.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--IMPROVEMENT IN THE SATURATION OF NEGATIVE SINTERED METAL ELECTRODES
FOR NICKEL CADMIUM STORAGE BATTERIES -U-
AUTHOR-(02)-GAMASKIN, YE.I., POZIN, YU.M.

P

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 46(3), 681-3

DATE PUBLISHED--------70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE)

TOPIC TAGS--NICKEL CADMIUM BATTERY, STORAGE BATTERY, BATTERY ELECTRODE,
CATHODE POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0906 STEP NO--UR/0080/70/043/003/0681/0683

CIRC ACCESSION NO--AP0113741
UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0113741

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IMPREGNATION OF POROUS NI PLATES, THE ELECTRODES FOR ALK. STORAGE BATTERIES, WITH MIXTS. OF SOLNS. OF COCL SUB2 AND CD(NO SUB3) SUB2 WAS STUDIED IN THE CASE OF CATHODE POLARIZATION. THE POLARIZATION OF THE PLATES WAS DUE TO THEIR CONTACT WITH THE CD ANODES. THIS METHOD OF IMPREGNATION SHORTENS THE TIME NECESSARY FOR PREPG. THE ELECTRODES BY THE FACTOR OF 3-4 AND ELIMINATES THE CORROSION IN CD SOLNS. FACILITY: NAUCH.-ISSLED. AKKUMULYATOR. INST., LENINGRAD, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SINTERED OXIDE NICKEL ELECTRODES FOR ALKALINE BATTERIES -U-

AUTHOR-(02)-POZIN, YU.M., KRICHEVSKAYA, A.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,207
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NR 47 (10)
DATE PUBLISHED--09MAR70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., ENERGY CONVERSION
(NON-PROPULSIVE)
TOPIC TAGS--NICKEL OXIDE, BATTERY ELECTRODE, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1464 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126995
UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0126995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ELECTRODE WITH IMPROVED ELEC. CHARACTERISTICS IS PREPD. BY SUCCESSIVELY SATG. THE POROUS BASE IN A NI SALT SOLN., IN ALKALI, AND IN A CD SALT SOLN. TO THE CD SALT SOLN. 30-80 G NI-L. IS ADDED BY INITIALLY STORING THE SOLN. OVER A NIO HYDRATE FOR 2-10 HR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EXPEDIENCY OF THE DRYING OPERATION IN THE PRODUCTION OF SINTERED ELECTRODES FOR ALKALINE BATTERIES -U-

AUTHOR--POZIN, YU.M.

COUNTRY OF INFO--USSR

SOURCE--POROSH. MET. 1970, 10(1), 98-101

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, CHEMISTRY, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ELECTRODE PROPERTY, STORAGE BATTERY, MANUFACTURING METHOD, METAL SURFACE IMPREGNATION, CHEMICAL SOLUTION, CHEMICAL ABSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/1970 STEP NO--UR/0226/70/010/001/0098/0101

CIRC ACCESSION NO--AP0050031

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0050031

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF THE PROCESS OF POROUS NI PLATE IMPREGNATION WITH SOLNS. OF NI AND CD SALTS IN THE PRODUCTION ELECTRODES FOR STORAGE BATTERIES IS CONSIDERED. DATA ARE OBTAINED CONCERNING THE CHANGE IN THE SAMPLE POROSITY AND THE RATE OF THE CAPILLARY RISE OF THE SOLN. DURING REPEATED IMPREGNATION. AS A RESULT OF THE POOR WETTING OF THE PLATES BY THE SOLNS., IT IS NOT EXPEDIENT TO IMPREGNATE THE DRIED PLATES. IN THIS CASE THE PENETRATION OF THE SALT SOLN. INTO THE PORES OCCURS BY MEANS OF CONVECTION AND DIFFUSION, AND THE WETTING CONDITIONS HAVE NO SIGNIFICANT VALUE.

UNCLASSIFIED

Acc. Nr: AP0049791 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR 0138

1

101586n **Molecular-weight distribution of cis-1,4-polybutadiene in relation to its preparation conditions.** Shatalov, V. P.; Grigor'eva, L. A.; Kistereva, A. E.; Grigor'ev, V. B.; Pozina, E. N. (Voronezh. Filial Vses. Nauch.-Issled. Inst. Sin. Kauch. im. Lebedeva, Voronezh, USSR). *Kauch. Rezina* 1970, 29(1), 1-3 (Russ). The mol. wt. distribution of the title polymer (I) dissolved in C_6H_{14} + C_7H_{16} was studied by ultracentrifugation. Increased degree of conversion of butadiene (II) led to a displacement of the mol. wt. distribution curve max. towards the higher mol. wts., but increased polymn. temp. of II caused a shift in the mol. wt. distribution curve max. toward lower mol. wts. The mol. wt. distribution of I depended on the way in which the organoaluminum compd. and Ti halide catalysts were added. Thus, fractional addn. of the 2 catalysts to polymg. II brought about a significant widening in the mol. wt. distribution of I and increased content of low mol. wt. and high mol. wt. fractions. Fractional addn. of II had a favorable effect on polydispersity and improved polymer extrudability. CKJR

98.

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REEL/FRAME
19801713

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1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PECULIARITIES OF VISUALIZATION OF SOME PATHOLOGICAL CONDITIONS IN
THE LUNG DURING POLYDIRECTED TOMOGRAPHY AND ZONOGRAPHY -U-
AUTHOR-(02)-POZMOGOV, A.I., CHEPURIN, V.A.

P

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 5, PP 62-66

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LUNG, RESPIRATORY SYSTEM DISEASE, RADIOLOGY, X RAY TECHNIQUE,
DIAGNOSTIC METHODS, BLOOD VESSEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1741 STEP NO--UR/0475/70/000/005/0062/0066

CIRC ACCESSION NO--AP0129109
UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129109

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TOMOGRAPHIC ROENTGENOGRAPHIC EXAMINATION WAS CARRIED OUT IN 75 PATIENTS WITH DIFFERENT PULMONARY DISEASES, THE TUBE BEING MOVED LINEARY, ELLIPTICALLY AND CIRCULARY. IT WAS FOUND THAT ELLIPTICAL AND CIRCULAR MOVEMENTS OF THE TUBE ARE A VALUABLE ADJUNCTION TO LINEAR ESPECIALLY DURING LOCATION OF THE LESIONS IN UPPER PARTS OF THE LUNGS. THE INTERPRETATION OF ROUND SHADOWS IS NOT ALWAYS SIMPLE WITH TOMOGRAPHY. HERE IT MAY BE NECESSARY TO TAKE MANY PICTURES. ZONOGRAPHY MAY BE OF CONSIDERABLE HELP IN DETECTING SMALL FOCI AND DETERMINATION OF THE STATE OF THE BLOOD VESSELS.

FACILITY: KIYEVSKIY NAUCHNO ISSLEDOVATEL'SKIY INSTITUT EKSPERIMENTAL'NOY I KLINICHESKOY ONKOLOGII.

UNCLASSIFIED

Industrial

P

UDC 621.311.25:621.039.002.7

USSR

POZMOGOV, YE. N., and ANDREYEV, P. A.

"Current Trends in Developing Equipment for Atomic Energy Plants"

Energomashinostroyeniye (Power Plant Equipment Construction), No 1, 1970, pp 1-5 (from RZh-Teploenergetika, No 5, May 70, Abstract No 5U47)

Translation: Based on recent publications, current trends in design of atomic power plant equipment are discussed. In addition to specific factors relating to atomic power production in several countries, general considerations are treated which concern basic construction of AES (atomic energy plants). A brief treatment is given to ways and means of optimizing thermoelectric apparatus in atomic plants; methods of making atomic plant energy competitive, and development of reliable equipment. Competitive atomic plant electric power will be possible only when generating equipment can be serially produced. Data are cited on the creation of atomic plant equipment construction departments in leading capitalist countries, resulting from the combined design efforts of large power-producing companies; discussion is also included on construction of large factories and plants specializing in production of atomic power plant equipment. Nine figures, three tables, four references.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THE EFFECT OF GROWTH CONDITIONS OF THERMOGENESIS IN CANDIDA TROPICALIS -U-

AUTHOR-(03)-PLATONOV, A.L., POZMOGOVA, I.N., LOGINOVA, L.G.

P

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 47-54

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--YEAST, FUNGUS, GLUCOSE, CULTURE MEDIUM, NITROGEN, PHOSPHORUS, CALORIMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0484 STEP NO--UR/0220/70/039/001/0047/0054

CIRC ACCESSION NO--AP0117720

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0117720

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. YEAST GROWTH WAS ACCOMPLISHED WITH AN INTENSIVE HEAT OUTPUT WHICH WAS REGISTERED JUST AFTER CELL INOCULATION IN THE CHAMBER OF MICROCALORIMETER. DURING THE FIRST SIX HOURS OF THE YEAST GROWTH THE BULK OF ENERGY (60-78PERCENT), RELEASED AS A RESULT OF GLUCOSE OXIDATION BY THE CULTURE, WAS CONTAINED IN THE PRODUCTS OF GLUCOSE INCOMPLETE OXIDATION. THERMOGENESIS DECREASED DURING THE YEAST GROWTH ON MEDIA WITHOUT A NITROGEN OR PHOSPHORUS SOURCE. HOWEVER, RECALCULATION OF THE ENERGY RELEASED AS HEAT PER 1 MG OF UTILIZED GLUCOSE HAS SHOWN THAT IT WAS 1.5-2 TIMES HIGHER THAN IN THE CASE OF THE YEAST GROWTH ON THE COMPLETE MEDIUM. HENCE, UNCOUPLING BETWEEN THE RATE OF ENERGY ACCUMULATION AND THE YEAST GROWTH TOOK PLACE ON THE MEDIUM WITHOUT N OR P. ONTENSIVE AERATION DURING THE YEAST GROWTH ON THE PHOSPHORUSLESS MEDIUM RESULTED IN AN INCREASE OF GLUCOSE UTILIZATION, BIOMASS YIELD AND THERMOGENESIS. THE VALUE OF ENERGY COEFFICIENT REMAINED THE SAME UP TO A CERTAIN LIMIT OF AERATION; IF IT BECAME HIGHER THE ENERGY COEFFICIENT DECREASED, PROBABLY, DUE TO A FALL PH PHOSPHORUS CONTENT DOWN TO PHYSIOLOGICAL THRESHOLD CONCENTRATION.

UNCLASSIFIED

Acc. Nr: AT0043979 P **Ref. Code:** URoooo

PRIMARY SOURCE: Geofizicheskiy Sbornik, Kiev, 1970, Nr 33, pp 49-54

CHANGES IN MAGNETIC PROPERTIES OF FERROMAGNETIC MINERALS AT ELEVATED PRESSURES AND TEMPERATURES

T. S. Lebedev, N. F. Pozganskaya
(Institute of Geophysics, Academy of Sciences, Ukrainian SSR)

Summary

Systematization and generalization of the data available in the publications have enabled the authors to derive graphs characterizing the effect of pressure on magnetic susceptibility and various types of remanent magnetization of the magnetite and titanomagnetite. An attempt has been made to estimate changes in magnetic susceptibility under a simultaneous effect of pressure and temperature. The results of the studies should be used for devising the techniques of determining magnetic parameters of the crustal material at different depths.

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REEL/FRAME
19770414

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USSR

UDC 581.19:632.952

TIKHONOVA, N. A., POZNANSKAYA, N. L. RUSAKOVA, V. A., IVANOVA, S. N., FADEYEV, Yu. N., IVANCHENKO, Yu. N., SHVETSOV-SHILOVSKIY, N. I., MEL'NIKOV, N.N. and ZHIL'TSOVA, G. I., All Union Scientific Research Institute of Chemical Plant Protection, Moscow, and the All-Union Scientific Research Institute of Phytopathology, Moscow

"Studies of the Fungicidal Activities of Certain Benzoxazoline Derivatives"

Leningrad, Makologiya i Fitopatologiya, Vol 7, No 5, 1973, pp 450-451

Abstract: Evaluations were made of the fungicidal effects of N-carbalkoxy-, N-carbalkenyloxy-, N-carbaryloxy-, N-carbamoyl-, and N-aminomethyl-derivatives of benzoxazoline-2 and its substituted compounds on the agents of wheat rust Puccinia triticina and P. graminis f. tritici, potato blight agent Phytophthora infestans, and the conidia of Alternaria solani and Botrytis cinerea. These compounds showed the most pronounced fungicidal effects at a concentration of 0.1% against the wheat rust agents, and somewhat less effect against potato blight. They are practically inactive at a concentration of 0.005% in vitro. As a rule, introduction of halogens into the

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USSR

TIKHONOVA, N. A., et al., Mikologiya i Fitopatologiya, Vol 7, No 5, 1973, pp 450-451

benzene ring reduced fungicidal activity. The results showed that derivatives of benzoxazoline may be effective fungicidal agents.

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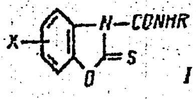
USSR

POZNANSKAYA, N. L., GOLOSKOVA, A. V., IVANOVA, S. N., SHVETSOV-SHILOVSKIY, N. I., and MEL'NIKOV, N. N.

"Method of Producing N-Carbamoylbenzoxazolin-2-thiones"

USSR Author's Certificate No 283987, filed 12/04/69, published 5/04/71. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 5N668P by L. V. Razbadovskaya)

Translation: Compounds with the general formula (I) (X=lower alkyl, H, halide, R=lower alkyl, alkenyl, aryl, substituted aryl) are produced by the reaction of the corresponding benzoxazolinthione with RNCO in the presence of a base in an organic solvent. Four drops of Et_3N and 10.4 g of MeNCO are added to a suspension of 18.6g 5-Cl-benzoxazolinthione in 150 ml dicholoroethane, stirred for 20 hours at 20°, the solvent is distilled, producing 12 g I (X=5-Cl, R=Me) (Ia), yield 50%, mp 244-6° (Isooctane). I can be similarly produced (given are X, R,



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USSR

POZNANSKAYA, N. L., et al., USSR Author's Certificate No 283987, filed 12/04/69, published 5/04/71. (Translated from Referativnyy Zhurnal Khimiya, No 5, Moscow, 1972, Abstract No 5N668P by L. V. Razbadovskaya)

yield in %, mp in °C): H, Me (IB), 50, 97-8; 6-Cl, Me, 78.8, 216-8; 6-Cl, m-Cl C_6H_4, 84, 168-9; 5Cl, Ph (Ic), 78, 245-6; H, allyl, 60,5, 82-3; 5-Me, Me, 30, 135-6; 5 Me, m-ClC_6H_4, 74, 164. Under similar conditions but with boiling of the reaction mixture, the product is I (given are X, R, yield in %, mp in °C): H, m-ClC_6H_4, 68, 139-40; 5-Cl, m-ClC_6H_4, 70, 260-2. I has biological activity. Ia and Ic in concentrations of 0.005% are superior to phygone in their effects on Botrytis cinerea, Fusarium Moniliforme, Venturia inaequalis, Aspergillus niger. Ia and Ib are effective seed disinfectants.

2/2

USSR UDC 613(075.8)

GABOVICH, R. D., POZNANSKIY, S. S., and SHAKHBAZYAN, G. Kh. Gigiyena (Hygiene)

Moscow, "Meditsina," 1971, 432 pp

Translation: Annotation: The second edition of this textbook has been considerably reworked and supplemented with new achievements in the development of the science of hygiene.

It is intended for students in the treatment and pediatrics schools of medical institutes.

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USSR

UDC 621.43.011:533;621.5:533

BRIZHENYUK, N. I., POZNANSKIY, V. I., RYBAKOV, V. S., SELEZNEV, Yu. V., KHOKHLOV, Yu. G.

"On the Problem of Determining the Rate of Combustion of Fuel in Diesels"

V sb. 11-ya Vses. konf. po vopr. ispareniya, goreniya i gaz. dinamike dispersn. sistem. 1972 (11th All-Union Conference on Problems of Evaporation, Combustion and Gasdynamics of Disperse Systems, 1972 -- Collection of Works), Odessa, 1972, p 44 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B421)

Translation: A formula for determining the rate of combustion of fuel in diesels that was proposed by one of the authors of the article is analyzed. It is shown that one of the factors determining the rate of combustion is the rate of evaporation of the fuel, which depends in turn on the thermodynamic parameters of the medium, the surface and the volume of the fuel jet. The rate of heat release was investigated as a function of the basic physicochemical parameters. Yu. F. Dityakin.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--MECHANISM OF PRIMARY PROCESSES DURING THE PHOTOLYSIS OF TRIS,ETHYLENEDIAMINE,COBALT ,III, CHLORIDE -U-

AUTHOR-(03)-POZNYAK, A.L., BUDKEVICH, B.A., SHAGISULTANOVA, G.A.

P

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(3), 286-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--COBALT COMPLEX, ETHYLENEDIAMINE, PHOTOLYSIS, DEUTERIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0864 STEP NO--UR/0456/70/004/003/0286/0287

CIRC ACCESSION NO--AP0137892

UNCLASSIFIED

CIRC ACCESSION NO--AP0137892

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOTOLYSIS OF (COEN SUB3)CL SUB3 AND ITS DEUTERATED ANALOGS AT 77DEGREESK IN A H SUB2 SO SUB4, H SUB3 PO SUB4, OR D SUB3 PO SUB4 MATRIX LEADS TO THE FORMATION OF CH SUB2 NH SUB3 PRIME POSITIVE BIRADICAL IONS, H OR D ATOMS, HYDRATED CO PRIME2 POSITIVE, AND HYDRATED ELECTRONS. ABS. CONCNS. OF PRODUCTS ARE GIVEN AS A FUNCTION OF IRRADN. TIME. FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 042

TITLE--FORMATION AND STABILIZATION OF CHROMIUM V DURING THE RADIATION CHEMICAL OXIDATION OF CHROMIC HYDROXIDE COPRECIPITATED WITH ZIRCONIUM

AUTHOR-(03)-LESNIKOVICH, A.I., SVIRIDOV, V.V., POZNYAK, A.L.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(3), 240-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RADIATION EFFECT, CHROMIUM COMPOUND, OXIDATION, HYDROXIDE, ZIRCONIUM COMPOUND, ALUMINUM COMPOUND, RADIATION CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0866

STEP NO--UR/0250/70/014/003/0240/0242

CIRC ACCESSION NO--AT0129935

UNCLASSIFIED

PROCESSING DATE--04DEC70

UNCLASSIFIED

2/2 042

CIRC ACCESSION NO--AT0129935

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COPPTD. MIST. OF CR-ZR OR CR-AL HYDROXIDE GELS WERE INVESTIGATED AFTER IRRADN. BY A DOSE OF 10 PRIM7 R AT ROOM TEMP. HIGH CR(V) STABILIZATION OBSERVED MAY BE EXPLAINED BY A SLOW DISPORPORTIONATION PROCESS IN COPPTD. HYDROXIDE. IMPERFECTION IN THE HYDROXIDES STRUCTURE SUPPORTS THE EASE OF RADIATION CHEM. OXIDN. FO CR(III) IONS. FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SENSITIZED PHOTOOXIDATION OF AMINO ACIDS IN FROZEN SOLUTIONS -U-

AUTHOR-(03)-POZNYAK, A.L., SHAGISULTANOVA, G.A., ARZHANKOV, S.I.

COUNTRY OF INFO--USSR

P

SOURCE--BIOFIZIKA 1970, 15(1), 20-1

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, AQUEOUS SOLUTION, UV IRRADIATION, FREE RADICAL,
ELECTRON SPIN RESONANCE, PHOTOOXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0633 STEP NO--UR/0217/70/015/001/0020/0021

CIRC ACCESSION NO--AP0117859
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117859

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. .CH SUB2 NH SUB3 PRIME POSITIVE (I), .CH(NH SUB3 PRIME POSITIVE)ME, .CH(NH SUB3 PRIME POSITIVE)CHME SUB2, AND .CH(NH SUB3 PRIME POSITIVE)CH SUB2 OH RADICAL IONS WERE OBTAINED BY IRRADIATING AT 77DEGREESK, WITH UV LIGHT, FROZEN AQ. SOLNS. OF GLYCINE, DL,ALPHA,ALANINE, DL VALINE, AND DL SERINE, RESP., IN THE PRESENCE OF NH SUB4 FE(SO SUB4) SUB2 OR CSCO(SO SUB4) SUB2. THE PRODUCTS WERE IDENTIFIED BY ESR SPECTRA. THE RATE OF ACCUMULATION OF I INCREASED WITH INCREASING PH OF THE SOLNS. UP TO PH 8 AND THEN DECREASED. THIS SHOWS THAT THE RADICAL IONS WERE FORMED MAINLY FROM THE ZWITTERIONS OF THE AMINO ACIDS. FACILITY: V. I. LENIN BVELORUSS. STATE UNIV., MINSK, USSR.

UNCLASSIFIED

Steels

USSR

UDC 621.73.073

TISHAYEV, S. I., KONRAD, YU. G., POZNYAK, L. A., STETSENKO, N. V., and OSADCHIY, A. N.

"New Steel 5Kh2VMNF (DI-32) for Hot Deforming Die Tool"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 8, Aug 73, pp 14-16

Abstract: The results of comparative studies of the basic properties are presented for a new steel 5Kh2VMNF (DI-32), standard grade steel 5KhNM, and a steel recently presented, 40KhSMF, as well as the strength of dies made from the new steel and 5KhNM. Chemical composition of the three steels was (in %):

	C	Mn	Si	Cr	Mo	Ni	W	V
5Kh2VMNF	0.47	0.49	0.40	1.78	0.49	1.50	0.87	0.37
5KhNM	0.54	0.64	0.24	0.80	0.19	1.65	--	--
40KhSMF	0.38	0.57	0.80	1.69	0.95	0.10	--	0.35

Data of mechanical tests showed that the new steel surpasses the other two steels in both heat resistance and impact strength for the same level of strength. The new steel also had higher hardness than the other two steels for all tempering temperatures. The average strength of dies made from

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USSR

TISHAYEV, S. I., et al., Kuznechno-Shtampovochnoye Proisvodstvo, No 8, Aug 73, pp 14-16

steel 5Kh2VMNF was 2.5-3 times higher than dies made from 5KhNM and the economic effect from use of the new steel amounts to 1000 rubles/ton. Tests of the new steel and 5KhNM were conducted for tools made of the two steels at the Tokmaksk Die-Forging Plant. Four tables, four bibliographic references.

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P

UDC 669.14.018.[illegible]

USSR

LEV, I. Ye., POZNYAK, L. A., SKRYNCHENKO, Yu. M., VOROB'YEV, [illegible], and [illegible], L. S., Dnepropetrovsk Metallurgical Institute

"Influence of Oxygen and Alloying Elements on Structure, Phase Composition, and Heat Resistance of Stamping Steels"

Novokuznetsk, Izv. VUZ, Chern. Metallurgiya, No 10, 1970, pp 99-103

Abstract: Specimens were cut from annealed and forged billets of 12 types of stamping steels, and were subjected to electrolysis in 0.3 n HCl at 18-25° C with a current density of 0.02 a/cm^2. In the annealed state, the structure of the steels consisted of sorbite-like pearlite plus excess carbides. The least carbide heterogeneity was in the specimens containing moderate quantities of chromium, tungsten, and carbon (excess carbides increased with increasing quantity of these elements). The carbide phase consisted primarily of types $Me_{23}C_6$ and Me_6C compounds, the ratio between them depending on the composition and heat treatment. The greatest resistance to overheating was shown by the steels with predominate Me_6C carbides, as well as compositions with 2-4% Cr. Most of the steels studied showed a clearly expressed secondary hardening effect, the intensity and temperature intervals of which increase with an

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USSR

LEV, I. Ye., et al, Izv. VUZ, Chern. Metallurgiya, No 10, 1970, pp [illegible]-103

increasing content of chromium and tungsten. The alloying elements which did not noticeably influence the initial stages of decomposition of martensite during tempering at 455-675° K, increased heat resistance of the steels with higher heating.

Biochemistry

USSR UDC 547.964.4+577.17

SHVACHKIN, YU. P., VDOVINA, R. G., POZNYAK, M. G., VOLUYSKAYA, YE. N., RYABTSEV, M. N., KRIVTSOV, V. F., GRACHEVA, A. K., KRASNOSHCHERKOV, S. P., NOVOSELOV, V. A., GRUZDEV, V. S., OLEYNIK, A. M., KALINKINA, Z. B., FEDOTOV, V. P., IVANOV, A. I., YUDAYEV, N. A.

"New Synthesis of Human Insulin"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 216-217

Abstract: Human insulin was synthesized on the basis of obtaining A and B chains by the solid phase method /R. B. Merrifield, J. Am. Chem. Soc., No 85, 2149, 1963; J. Stuart, et al., Tverdofazny sintez peptidov, Moscow, Mir, 1971/ and subsequently combining the synthetic chains into the complete molecule of the biologically active hormone. Here, a new version of the synthesis is realized which permits exclusion of treatment of the chains with sodium in liquid ammonia which eliminates the danger of undesirable side reactions caused by this reagent /A. Marglin, et al., J. Am. Chem. Soc., No 88, 5051, 1966/. The A and B chains of human insulin were synthesized on an automated device using a spherical chloromethylated copolymer of styrene with 1% divinyl benzene as the insoluble carrier. All operations were performed in a nitrogen atmosphere. The derivatives of the L-amino acids used in the synthesis of the A and B chains are listed. The fluorohydrates of the chains were con-

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USSR

SHVACHKIN, YU. P., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 216-217

verted into S-sulfonates which exhibited no differences from the S-sulfonates of the corresponding natural chains of bull insulin. The synthetic A and B chains were recombined both with the corresponding natural chains and among each other. The resultant compounds had specific insulin activity of comparable magnitude to the previously synthesized insulin compounds [K. Lubke, et al., Adv. Enzymol., No 33, 445, 1970].

USSR UDC: 621.314.2

ZIMODRO, A. F., SHUBIN, V. V., BOL'SHAKOVA, L. P., POZNYAK, V. I.

"Quality Control of Ferrite Cores for Pulse Microtransformers"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 128-133 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V368)

Translation: The authors discuss some problems of sorting out ferrite cores for pulse microtransformers. The selected method of inspection is substantiated and experimental data are presented. Resumé.

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